The program is carried out in close collaboration with LFCR and SIAME laboratories where numerical and experimental tutorials will be performed. Students are integrated in the local research environment. They benefit from facilities (laboratories') and assist to the scientific seminars of the research teams.

Program Facts

ACADEMIC YEAR : Our full academic year runs from September to June

APPLICATION DEADLINE : Applications are open from November to April

HOW TO APPLY : The application documents must be uploaded on the website : **http://www.univ-pau.fr/en/apply-now**

PROGRAM INTENSITY: Full-time

DURATION: 1 year

CREDITS: 60 ECTS

LANGUAGE: Fully taught in English

TUITION FEES: European: 256€/year Extra-european: 640€/year

LEVEL OBTAINED: Master

HEAD OF THE MASTER PROGRAM: Prof. David Grégoire

HEAD OF THE CCCE COURSE: Prof. Stéphane Abadie

LOCATION: College of Sciences and Technology for Energy and Environment on the Basque coast campus (Anglet, France)

Master's degree in
Physics and Simulation in Civil Engineering

Computations in Coastal Engineering (CCE)

DIPLÔME NATIONAL DE MASTER CONTRÔLÉ PAR L'ÉTAT

Admission requirements

ENGLISH LANGUAGE REQUIREMENTS
Minimum required score CECRL B2 level in English

ACADEMIC REQUIREMENTS
Applicants must hold a Bachelor of Engineering, Bachelor of Science or equivalent.

ADMISSION REQUIREMENTS
Applicants must be fluent in English, both in writing and speaking.

An applicant whose native language is not English has to take a recognized international English test. Minimum required score CECRL B2 level in English.

Applicants must hold a M1 or a 4-year Bachelor of Engineering, Bachelor of Science or equivalent.
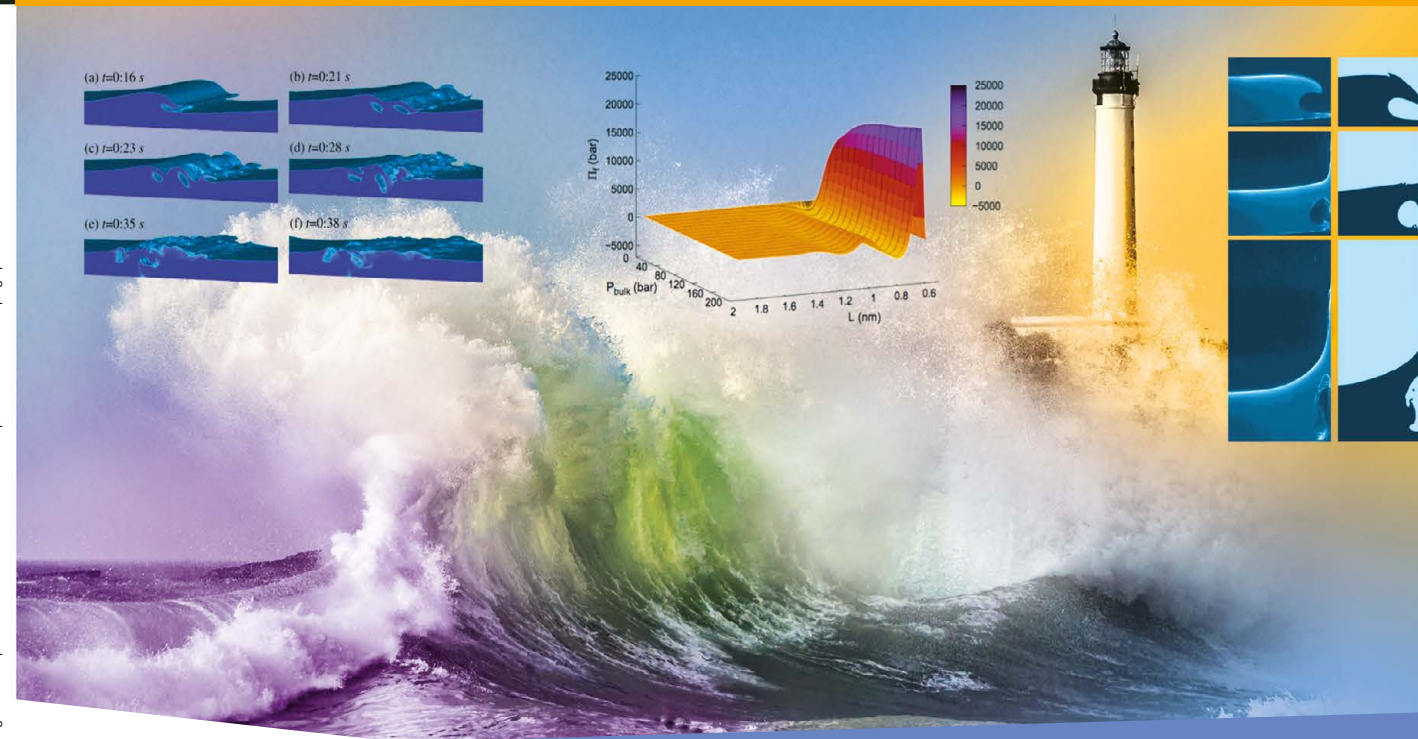
Contact

For any supplementary information or questions related to application, please contact: **master.psce@univ-pau.fr**

More information : **https://formation.univ-pau.fr/m-ccce**

International Welcome Desk : **http://univ-pau.fr/en/welcome-desk**

http://formation.univ-pau.fr/m-cce

ISA BTP ÉCOLE D'INGÉNIEURS

UNIVERSITÉ DE PAU ET DES PAYS DE L'ADOUR

e2s UPPA energy environment solutions

Overview

The CCE track focuses on the modeling and simulation of coastal engineering related processes. Topics extensively studied include, wave modeling, waves interactions with structures, soil and structure complex behavior. A specific focus is put on numerical methods and open source computational tools commonly used in this field including : Telemac 2D, Artemis, OpenFoam, BOSZ (Boussinesq wave model), XBEACH, Cast3M (finite element structure model).

This track belongs to the international master's degree in Physics and Simulation in Civil Engineering which offers multidisciplinary key courses to achieve an advanced specialist level in the aforementioned fields. It is suited for students planning both an academic or an industrial career and provides the theoretical basis and the practical expertise required to pursue in research or R&D structures or companies.

The master is fully taught in English and is hosted at ISA BTP Engineering School in the French Basque coast area (Anglet, France).

Student Learning Outcomes

At the end of this program, the students in the Physics and Simulation in Civil Engineering Master will be able to:

- Demonstrate mastery of a solid body of knowledge and skills in engineering science to solve relevant problems,
- Design and conduct experiments, analyze and interpret data,
- Review, analyze, and interpret the body of scientific literature, contemporary issues and innovations in physics and civil engineering area,
- Produce quality research,
- Carry out a research project to understand a physical phenomenon pertaining to civil engineering, coastal engineering, geomechanics or physics of porous media.

Prospects for employment or further study

SECTORS:
- Coastal engineering

FIELDS:
- Research and R&D structures

POSITIONS:
- PhD student and R&D Engineer

ISA-BTP - Anglet

Anglet coast

Program objectives

- Prepare students at an advanced specialized level to meet present and future challenges in coastal engineering,
- Develop engineering research skills to engage in quality and successful research,
- Prepare students for leading positions in industry and government Research and Development departments.

SEMESTER 1 (SEPTEMBER – JANUARY)

Introduction to water waves mechanics	**4 ECTS**
Modeling in Coastal Engineering • Non linear shallow water equations • Berkhoff equation and other wave agitation models • Numerical project (Telemac2D, ARTEMIS)	**6 ECTS**
Advanced modeling in Coastal Engineering • Boussinesq and Green Naghdi models • Wave models based on Navier-Stokes equations • Spectral wave models • Numerical project (BOSZ, OpenFoam, SWAN)	**8 ECTS**
Solid mechanics and computational modelling • Basics of Continnum Mechanics • Space and time discretisation • Computational modelling and CAST3M practical project	**6 ECTS**
Language • French (or Spanish) as a Foreign Langage	**3 ECTS**
Bibliography	**3 ECTS**

SEMESTER 2 (JANUARY – JULY)

Research internship	**30 ECTS**

Example of research internship topics offered:
- Numerical modeling of wave tranformation and reflection over the Artha breakwater
- Wave Resonance Amplifications around an Island
- Simulation and measurements of flip-through impact in wet dam breaking